## EE 475 HW #3

Write a Matlab function that will take a system as input, generate its step response (in terms
of both numeric vectors (t, y) and graphic plot), compute all step response based time-domain
specifications (returned as variables with numeric values), and annotate the specifications on
the step response graph. An example plot is given below, and the returned variables are:
yss=0.9; ess=0.1; tr=1.68; td=1.36; ts=7.97; tp=3.67; Mp=16.3. Use the closed-loop system
from B-5-15 to test your function. Submit your Matlab code and the output plot for B-5-15.



- 2. Write a small Matlab script file consisting: 1) a few lines for you to enter the plant model TF; 2) a few lines for you to enter desired specifications for the closed loop system; 3) a few lines for you to enter a controller as a TF; 4) compute the closed-loop TF assuming negative unity feedback; and 5) call the function from problem 1 to generate the closed-loop step response and compute all specifications. Use this on B-5-13 System II. (The first block is the controller, the second block is the plant. Comment out the few lines for Step 2) since they are no use for B-5-13, but useful in the future.)
- 3. B-5-1
- 4. B-5-2
- 5. B-5-3
- 6. B-5-6
- 7. B-5-8
- 8. B-5-13, unit step response only.
- 9. B-5-14
- 10. B-5-15